Advances in desalination technologies are helping to generate new potable water to California

Desalination on the Move in California

By Fawzi Karajeh and Fethi BenJemaa

Desalination is not a new idea. There are over 11,000 desalination plants worldwide producing about 5,400 million gallons per day of desalinated water, of which 600 mgd is being produced in North America. It is reported that desalination capacity might grow by 10 to 20 percent annually in the coming decade. California scientists, resource planners, and policy-makers continue to take a long-term view of the water resources in the state. In the upcoming California Water Plan Update, water recycling as well as seawater and brackish water desalting are expected to be prominent components.

In addition to the growing demand for water due to population increase (it is estimated that California's population will increase by 17 million by the year 2030), current conventional water sources are threatened by overdraft, depletion and pollution. Other factors contributing to the dwindling of water supplies include climatic changes, the imminent compliance with the Colorado River 4.4 plan, successive and extended periods of drought, and the growing need for environmental and ecosystem restoration. Desalination has the potential to offer an alternative supplemental reliable water supply. In addition to enhancing water quality through state-of-the-art treatment processes, the use of desalinated water would free up other water supplies contributing to ecosystem restoration, minimizing transfers from agriculture to urban users, and reducing the dependence on imported water.

The California Legislature has recognized the future importance of seawater and brackish water desalination through legislation. In 2002, the Legislature approved Assembly Bill 2717 (Robert Hertzberg) which mandated DWR to convene the California Water Desalination Task Force to look into potential opportunities and impediments for using seawater and brackish water desalination, and to identify what role, if any, the state should play in furthering the use of desalination technology. For more information about the recommendations the Task Force submitted to the Legislature in its final report visit **www.owue.water.ca.gov/recycle.**

In November 2002, California voters passed Proposition 50, the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002. Chapter 6 of Proposition 50, entitled Contaminant and Salt Removal Technologies, allocates $50 million in grants for seawater and brackish water desalination projects under Chapter 6(a). The program, administered by DWR, provides grants for construction projects as well as research and development, feasibility studies, and pilot and demonstration projects. This program aims to assist local agencies with the development of local water supplies through brackish water and seawater desalination. For more information visit www.owue.water.ca.gov/finance/index.cfm.

And, on August 9, 2003, Governor Davis approved AB 314 (Kehoe). This bill made it a state policy that desalination projects developed by or for public water entities be given the same opportunities for state assistance and funding as other water supply and reliability projects, and that desalination be consistent with all applicable environmental protection policies in the state.

Federal legislation encouraging the development of desalination projects as a means of addressing the nation's water supply problems was introduced in the House in February 2004. The legislation, entitled the "Desalination Energy Assistance Act of 2004," would authorize the Department of Energy to make competitive grants available to make drinking water from seawater and brackish groundwater.

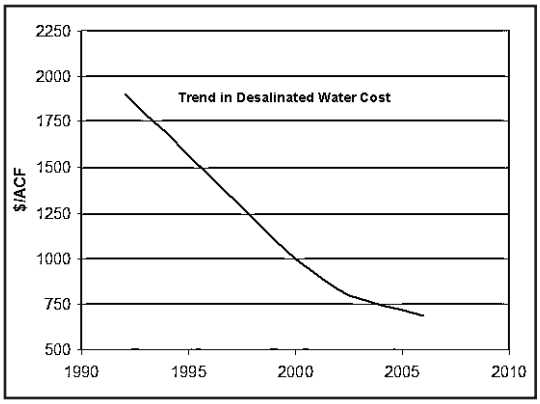

Figure 1: Trend in Desalinated Water Cost

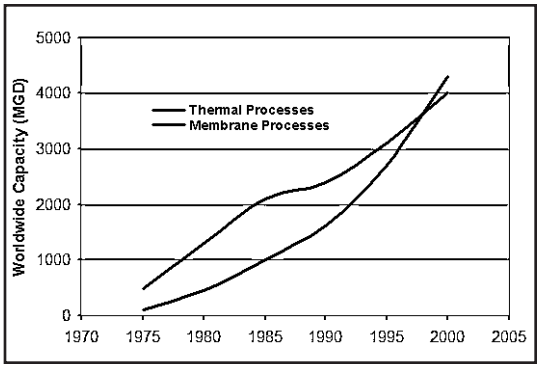

Figure 2: Global Desalination Capacity